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08/487,283

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/487,280	06/07/95	EVANS	M ALX [illegible]

EXAMINER

HM51 0218

SETH A FIDEL
ALEXION PHARMACEUTICALS
25 SCIENCE PARK
SUITE 360
NEW HAVEN CT 06511

GABEL, D

ART UNIT	PAPER NUMBER
1642	9

DATE MAILED: 02/18/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

2/18/98

OFFICE ACTION SUMMARY

☑ Responsive to communication(s) filed on 10/1/97 12/1/97

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☑ Claim(s) 1-17 is/are pending in the application.
Of the above, claim(s) 13-17 is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☑ Claim(s) Rejected 1-12 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☑ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☑ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☑ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

* U.S. GPO: 1996-421-632/40206

DETAILED ACTION

1. Effective 2/7/98, the location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1642, Technology Center 1600.

2. Applicant's amendment, filed 12/2/97 (Paper No. 8), is acknowledged. Claims 16 -17 were added.

Newly submitted claims 16-17 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Newly submitted claims are drawn to methods of refolding a single chain antibody previously not claimed. Claims 16-17 (Group V) are drawn to methods which require different ingredients, process steps and endpoints from Groups III/IV and are not related as products and a method of use with Groups I/II. Therefore, they are novel and unobvious in view of each other and are patentably distinct.

Applicant's election without traverse of Group I (claims 1-12) in Paper No. 7 is acknowledged.

Accordingly, claims 13-17 are withdrawn from consideration as being directed to a non-elected invention. See 37 C.F.R. § 1.142(b) and M.P.E.P. § 821.03.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed, that is, C5-specific antibodies. Applicant should restrict the title to the claimed invention.

4. Formal drawings and photographs have been submitted which fail to comply with 37 CFR 1.84. Please see the enclosed form PTO-948.

Applicant is reminded to change the Brief Description of the Drawings and the specification in accordance with these changes.

Photographs are not acceptable until a petition is granted.

5. The application is required to be reviewed and all spelling, TRADEMARKS, and like errors corrected.

Applicant is required to identify the nucleotide and amino acid sequences in the specification with SEQ. ID NOS.

Trademarks should be capitalized or accompanied by the ™ or ® symbol wherever they appear and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the trademarks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

6. Claims 2-4 and 6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 and 6 are indefinite in the recitation of "substantial" and "substantially" because the metes and bounds of these terms are ambiguous and not clearly defined. These terms are relative terms which renders the claim indefinite. These terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention

The amendments must be supported by the specification so as not to add any new matter.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

9. Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wurzner et al. (Complement. Inflamm., 1991) (see entire document). Wurzner et al. Teach inhibitory CD5-specific antibodies. Applicant is reminded that no more of the reference is required than that it sets forth the substance of the invention. The claimed functional limitations addressed by the applicant would be inherent properties of the referenced antibodies.

10. Claims 1-12 are rejected under 35 U.S.C. § 103 as being unpatentable over Wurzner et al. (Complement. Inflamm., 1991) in view of art known conventional procedures to generate humanized and antibody fragments (e.g. scFv) as taught by Queen et al. (U.S. Patent No. 5,530,101) and acknowledged by the instant specification (pages 35-42). The instant claims are drawn to C5-specific antibodies and nucleic acids, vectors and methods of producing said antibodies.

Wurzner et al. teach inhibitory CD5-specific antibodies, including various properties encompassed by the claimed invention as well as being a useful tool in investigations of complement formation and activity (see entire document). This reference differs from the instant claims by not teaching the art known generation of humanized and scFV antibodies as well as nucleic acids, vectors and methods of producing said antibodies and nucleic acids, vectors and methods of producing said antibodies.

Queen et al. teach the art known generation of humanized and antibody fragments as well as the nucleic acids, vectors and methods of producing said antibodies for various diagnostic and therapeutic uses (see entire document)

Similarly, the specification acknowledges that generating antibodies including humanized antibodies and antibody fragments as well as producing said antibodies and the nucleic acids that encode said antibodies was conventional at the time the invention was made (see pages 35-42 of the instant specification).

Although the references are silent about the exact sequences of the C5-specific antibodies and exact epitope, the recombinant techniques and computer analyses of CDR grafting as known in the art as taught by Queen and acknowledged in the specification would have resulted in the same or very nearly the same structural and functional characteristics of the instant claims since both the references and instant invention use the same techniques, the same or nearly the same antibody specificities and the same goals. The claimed functional limitations encompassed by the claims would be expected properties of selecting for C5-specific antibodies to specifically bind and inhibit complement activities, as described in Wurzner et al.. The claims drawn to a specifically defined epitope of SEQ ID NO:1 is acknowledged. However this claim recites "comprising" which reads on amino acids 8-12 and more of SEQ ID NO: 1. Therefore the C5-specific antibodies taught by Wurzner et al. meets the claims as it reads on binding any portion of the entire SEQ ID NO: 1. Alternatively, it would have well be within the purview of the ordinary artisan to determine the epitope specificity of C5-specific antibodies having the binding and functional properties taught by Wurzner et al. The record does not contain any evidence that the prior art C5-specific antibodies differ in a significant manner from the claimed recitation or that one of ordinary skill in the art would expect to generate using C5 as the starting antigen in the basic method of generating antibodies and humanizing said antibodies as well as screening for those C5-specific antibodies having the properties taught by Wurzner et al.

One of ordinary skill in the art at the time the invention was made would have been motivated to select for C5-specific antibodies as diagnostic and therapeutic tools associated with complement-related diseases and syndromes. From the teachings of the references, it was apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

11. It is noted that the instant specification discloses some differences between the 5G1.1 and N19/8 anti-C5 antibodies. However, it appears that anti-C5 antibodies such as N19/8, as taught by Wurzner et al. above meet the claimed C5 specificity and function. Applicant is invited to distinguish prior art anti-C5 antibodies and the instant claimed antibodies.

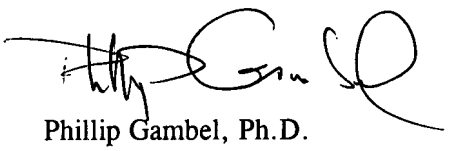
12. No claim is allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (703) 308-3997. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lila Feisee can be reached on (703) 308-2731. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014 or (703) 308-4242.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to **[lila.feisee@uspto.gov]**.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.



Phillip Gambel, Ph.D.
Patent Examiner
Technology Center 1600
February 9, 1998